AMENDMENTS TO THE SPECIFICATION:

Please replace the paragraph bridging pages 11 and 12 with the following paragraph:

FIG. 1 is a general schematic illustration of the multichannel epifluorescent detection system using a moving pinhole. The system includes a radiation source **10**, an interference filter **11**, a dichroic beamsplitter **12**, a convergent cylindrical rectangular lens **13**, a long pass filter **14** and a photon detector **16**. The source irradiates excitation light **19** to the dichroic beamsplitter **12** which is positioned at an angle (which is 45° in this example) to the beam. This beamsplitter reflects radiation of wavelengths below the specified wavelength, acting as a long pass filter. The reflected radiation is then directed axially to the sample channels **20**. An interference filter **11** is preferably included in this embodiment to isolate the wavelength necessary for excitation of the fluorescent sample and at the same time eliminate the background scatter caused by the radiation of undesired wavelengths. The interference filter **11** is particularly essential to isolate the necessary excitation wavelength when the light source employed is not monochromatic, such as Hg, Xe, or tungsten lamps. The convergent cylindrical rectangular lens **13** focuses the excitation radiation into a beam of focused light with an elongated cross-section throughout its length, e.g, a line. The axis of the convergent cylindrical rectangular lens **13** is placed perpendicular to the microchannels **20** or, perpendicular to the array of samples to be determined. A ~~simple~~ single pinhole **17** with an aperture matching the size of the area to be detected allows the excitation beam to reach a selected sample. The resulting fluorescent emission **23** is collected axially by the convergent cylindrical rectangular lens **13**, and transmitted through the dichroic beamsplitter **12** and a long pass filter **14**, and then focused onto the photodetector **16** by a convex lens **18**. The band pass filter **14** is selected to block any background or scattered light from the radiation source. After the release of the emitted radiation **23**, a scanner or conveyer system **21** causes the pinhole **17** (not drawn to size) to move to the next microchannel. In this manner, by scanning the pinhole **17**, the excitation radiation and the fluorescent emission is sequentially brought to and collected from every microchannel or sample volume in the array. The permanence time of the pinhole in every sample is pre-set and electronically controlled to allow for the excitation and emission of every individual sample before moving to the next. By incorporating a moving pinhole **17**, the detection system of the present invention avoids the interference caused by cross talk between channels since one sample is illuminated at the time. By using a pinhole **17**, interferences due to scattered light from the optics and the mass of the glass plate **22** comprising the channels are further avoided. The system can be modified for multicolour fluorescence detection by

adding a rotating filter wheel **30** (shown in Figure 1B) before the detector. The filter wheel comprises a predetermined number (usually 4) of band filters which are designed to block the radiation at the wavelengths of the excitation radiation sources and transmit fluorescence at wavelengths typically longer than those for the excitation wavelengths. The filter wheel **30**, controlled by means of a rotor **26**, rotates and brings sequentially the set of filtered into the path of the emission beam, thus permitting the detection of the fluorescent emission of different dyes present in the sample.

Please replace the paragraph bridging pages 13 and 14 with the following paragraph:

FIG. 3A is a schematic diagram of a multi-wavelength fluorescence detection system for multichannel electrophoresis where a detector ~~**30**~~ **31**, which may consist of several individual photodetectors, a multi-segmented photodetector or a charged coupled device (CCD) camera is used for detection of two-color fluorescence emission using an array of moving pinholes. The radiation of a laser light source **32** is first split into two color lines and directed at 45^0 relative to the microchannel plate by two convergent cylindrical rectangular lenses **34**. The laser beams are focused on to two different parallel positions. A set of pinhole pairs 36 aligned longitudinally in a parallel array is scanned through the focused beam lines to allow excitation radiation to reach the samples which contain two different fluorescent dyes, the fluorescent emission is allowed to pass through the pinholes **36**. If there are more channels than pinholes, the pinholes are moved to a next channel. The fluorescent emission of every dye is captured by the detector ~~**30**~~ **31** through a convex lens **38** at the two different positions simultaneously. To avoid interferences due to fluorescence cross-talk between the two positions of detection, the fluorescent emission **40** of each position is filtered though two band pass filters arranged in parallel in a filter wheel **42** as shown in FIG 3B. The advantage of using two (or more) laser lines isolated spatially is that a higher duty cycle can be realized compared to the use of filter wheels. With the improved sensitivity and throughput by using an array of moving pinholes, this system can be very useful in analyzing large number of samples.